REMARKS

Claims 1-20 are pending in the present application. In the above amendments, claims 1, 3, and 5 have been amended, and new claims 6-20 have been added. Therefore, after entry of the above amendments, claims 1 - 20 are pending in this application. Applicants believe that the present application is now in condition for allowance, which prompt and favorable action is respectfully requested.

Claims 1-5 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Siwiak US Patent 5,640,166, in view of Sickles, II US Patent 3,940,695, and Siwiak et al, Dent or Ishikawa et al.

103 Rejection of Claims 1-5

The Examiner sates that Siwiak teaches apparatus for frequency correction in a wireless communication system where transmissions experience a Doppler effect comprising a first frequency synthesizer for generating a carrier signal at a rate responsive to an input wherein the rate input adjusts over time according to a predetermined sequence to compensate for the Doppler. Furthermore, Siwiak teaches the use of a memory element for storing Doppler compensation values for minimizing Doppler frequency shifts at a plurality of predetermined points, which the Examiner believes reads on Applicants' Specification.

The Examiner notes that Siwiak is silent on other features such as having a counter coupled to the first input, and a second frequency synthesizer coupled to a clock input for generating clock signals responsive to a rate input. However, the Examiner states that Sickles teaches the use of an up/down counter and clock which "eventually" connects to a mixer and second synthesizer. The Examiner further states that Siwiak has an overall design that operates like Applicants', and that it would have thus been obvious to one skilled in the art to add the clock and counter of Sickles to Siwiak to obtain Applicants' invention.

Applicants respectfully disagree with the Examiner's characterization of various aspects of the references, and the conclusion that any combination of the references would obviate Applicants' invention. Applicants' believe that the references fail to teach several elements of Applicants' claimed invention and would not be combinable to achieve the invention, not is there a suggestion of such a combination to achieve the same structure.

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Siwiak appears to disclose storing an array of Doppler compensation values in a memory for later retrieval. These values are those values associated with the relative positions of beams across a multi-beam spot or projection. That is, <u>Siwiak clearly points out</u> that the middle beam (nadir) requires essentially no compensation while the leading edge beams require maximum correction in one direction, and that the trailing edge beams require maximum correction in an opposing sense (frequency increasing versus decreasing). However, Siwiak is <u>applying a fixed array of values</u> to a set of beams to greatly <u>minimize</u> the <u>overall</u> impact of Doppler from +/- 36 to +/- 8Hz. This is not an attempt to reduce or even eliminate the impact of Doppler even farther, AND more importantly it is a set relationship across the beams based on their relative position that is different but not within a beam. That is, one beam differs from another but the individual beams are not varied over time, and there is certainly <u>no teaching regarding time variance</u> with a <u>varying slope</u> to the <u>rate of change</u> as the beams approach and then move away from the intended communication point.

The selection of Doppler compensation in a predetermined "sequence" in Siwiak is not the same as that of Applicants. Siwiak clearly explains the relative fixed nature of the values and selected values based on whether or not, and when, a given beam is being used for communication versus not being used at all. There is <u>no suggestion of time varying the value</u> within each beam to compensate for motion of that beam relative to communications occurring only within that beam.

The other references fail to add this operation function or feature to the teachings in the art as well.

Not just looking at lines 44-53 of Column 6 in Siwiak, but also at lines 40-43, it is clear that Siwiak uses the term <u>"predetermined points" to mean physical locations and NOT points in time</u> or a time sensitive sequence of events. Siwiak is concerned with the overall beam pattern across the surface of the Earth, or a portion thereof, and how the relative Doppler between the beams differs within the pattern, and how to take advantage of such differences to reduce Doppler changes for inner beams versus outer beams (on the leading and trailing edges). As such, Siwiak is looking at the relative beam locations and the delays between those beams and the surface areas they interact with. Siwiak is looking at <u>physical "points" and not time</u>. This also means that Siwiak does not teach anything relative to "initial values" versus time varying values, as Siwiak is teaching the values associated with beam relative position which is time

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invariant in a satellite system of this type. The beams do not rearrange their order or move around but form a fixed multi-beam pattern. Siwiak stores information on Doppler in relationship to the physical distribution of the beams and not a time variant movement of the beams relative to system users.

Sickle II in Col 4 on lines 25-30, points out that the up/down counter will increment or decrement "accordingly at a fixed rate." Sickle II in fact teaches away from using Applicants' technique of varying the rate of incrementing or decrementing to achieve a variable rate Doppler compensation. This is not just a matter of having a clock to trigger signals.

The statement that while Siwiak does not teach the use of a clock but has an "overall design" that operates the same is simply hindsight guide restructuring of Siwiak into Applicants' invention. The statement that data is received, and a Doppler controller provides a shift to a synthesizer and signal generator connected to a down link transceiver is not complete, and fails to completely disclose the invention. Nor does this "overall" approach teach operation using the features discussed above regarding varying the rate or rate input.

Even if one wanted to combine the teachings of Siwiak and Sickles, II there is still no teaching regarding varying the incrementing and decrementing according to a rate control signal. Sickles II uses a fixed clock value thus making it not possible to control the signal in the same manner as Applicants' claimed structure or method. Added to Siwiak, which has a similar failing and is not even addressing time varying compensation within the same beams, does not yield Applicants' invention nor even suggest many aspects of the invention. As such, these references when taken alone or in combination do not obviate Applicants' invention and the rejection of these claims should be withdrawn.

In addition, based upon the teachings presented in the Specification, Applicants have added additional claimed apparatus and method steps which are clearly not found in or fairly suggested by the teachings of any of the references and for which protection is appropriate.

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CONCLUSION

In light of the amendments contained herein, Applicants submit that the application is in condition for allowance, for which early action is requested.

Please charge any fees or overpayments that may be due with this response to Deposit Account No. 17-0026.

Respectfully submitted,

Dated: February 5, 2004   By: _____

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